

We claim:

1. A method of drilling a borehole into a subsurface earth formation using a tubular drill string which includes at its lower end a bottom hole assembly comprising a drill bit, a drill steering system, and a surveying system, wherein the drill string includes a passageway for an auxiliary tool from a first position interior of the drill string above the bottom hole assembly to a second position wherein at least part of the auxiliary tool is exterior of the drill string below the bottom hole assembly, which passageway can be selectively closed, and which method comprises the steps of:

drilling so as to progress the drill string into the earth formation, until a tool operating condition is met; opening the passageway;

passing an auxiliary tool from the first position through the passageway to the second position, and

operating the auxiliary tool at the second position.

2. The method according to claim 1, further comprising the steps of closing the passageway, and continuing drilling.

3. The method according to claim 2, wherein closing the passageway comprises retrieving the auxiliary tool fully into the drill string.

4. The method according to claim 1, wherein opening the passageway comprises retrieving at least part of the closure element to surface.

5. The method according to claim 1, wherein the auxiliary tool is selected from the group consisting of a

logging tool, a fluid injection tool, a sampling tool, a pilot drilling tool.

6. The method according to claim 1, wherein in the course of a drilling operation at least two different auxiliary tools are deployed through the drill string and operated external of the drill string.

5 7. The method according to claim 1, wherein the part of the auxiliary tool that is passed to the second position has a largest diameter of at least 5 cm.

10 8. A system suitable for directionally drilling a borehole into a subsurface earth formation, which system comprises a tubular drill string including a bottom hole assembly at its lower end, which bottom hole assembly comprises a drill bit, a drill steering system, and a surveying system, and which bottom hole assembly is provided with a longitudinal internal passage so that the drill string forms a passageway for an auxiliary tool from a first position interior of the drill string above the bottom hole assembly to a second position wherein at least part of the auxiliary tool is exterior of the drill string below the bottom hole assembly, which part has a largest diameter of at least 5 cm, and wherein the bottom hole assembly comprises a removable closure element adapted to selectively close the passageway.

15 25 9. The system according to claim 8, wherein the closure element comprises a surface retrievable part.

20 30 10. The system according to claim 9, wherein the bottom hole assembly includes a mud motor comprising a tubular stator wherein a rotor is arranged, wherein the interior of the stator forms part of the passageway, and wherein the surface retrievable part of the closure element includes the rotor.

11. The system according to claim 8, wherein the drill steering system is a rotary steering system.
12. The system according to claim 8, wherein the surveying system has the form of a tubular sub, and  
5 wherein the interior of the tubular sub forms part of the passageway for the auxiliary tool.
13. The system according to claim 8, wherein the surveying system comprises a tubular sub wherein a probe is arranged, wherein the interior of the tubular sub forms part of the passageway for the auxiliary tool, and  
10 wherein the surface retrievable part of the closure element includes the probe.
14. The system according to claim 8, wherein there is further provided a pumpable transport tool for  
15 transporting the auxiliary tool from the position inside the drill string to the position wherein at least part of the auxiliary tool is exterior of the drill string.
15. A bottom hole assembly attachable to a tubular drill string, which bottom hole assembly comprises a drill bit,  
20 a drill steering system, and a surveying system, and which bottom hole assembly is provided with a longitudinal internal passage for at least part of an auxiliary tool, which part has a largest diameter of at least 5 cm.
- 25 16. A mud motor comprising a tubular stator and a rotor arranged in the tubular stator, and a bit shaft which is arranged to be driven by the rotor and suitable for transmittal of torque to a drill bit, wherein the rotor is releasably connected to the bit shaft so that the  
30 rotor can be longitudinally removed from the stator after disconnection from the bit shaft.